

XXXVI.—*Descriptions of new species of Coleopterous Insects belonging to the Genus Apocyrthus, collected by Hugh Cuming, Esq., in the Philippine Islands.* By G. R. WATERHOUSE, Esq., Assistant Secretary and Curator to the Zoological Society.

[Continued from vol. ix. p. 311.]

Order COLEOPTERA.

Sect. CURCULIONIDES.

Div. PACHYRHYNCHIDES, Schönh.

Genus APOCYRTUS, Erichson.

IN the 'Annals of Natural History' for June 1842, seventeen new species of *Apocyrthus* are characterized; descriptions of others I had prepared, but as they extended the paper to too great a length for a monthly journal, I was not sorry to lay aside the latter half of my work for revision, especially as I found several of the species exceedingly difficult to determine. Those already described, for the most part, present well-marked characters; there are some, however, which upon re-examination I think are doubtful. The *Ap. metallicus* and *Ap. lævicollis*, notwithstanding the differences in their markings, I am now inclined to regard as varieties.

*Apocyrthus gibbirostris* and *A. subfasciatus*.—The insect described under the former of these names I am now convinced is a female, the abdomen is somewhat convex beneath, and the terminal segment is conical; the apex of the elytra is slightly produced, and there is a small depression immediately in front of the prominent point. The male has the abdomen slightly concave, the terminal segment semicircular and coarsely punctured (in the female it is less distinctly punctured); the apex of the elytra is rounded, and the extreme point does not form a kind of tubercle as in the female; the thorax is rather larger in proportion to the elytra, and the rostrum is destitute of the hump; it is thickly punctured, and has a broadish longitudinal groove extending from the base and terminating about half-way towards the apex; on each side immediately in front of the eye is an oblong fovea joining the transverse groove which separates the rostrum from the head. This is the insect, I feel little doubt, described by M. Chevrolat under the name *Apocyrthus Erichsoni*\*, a name which has priority over mine. The specimens upon which I founded the *Ap. subfasciatus* are all males, and possibly are varieties of the *Ap. gibbirostris* (or rather *Erichsoni*); they, however, differ from those, which are *certainly* the males of *gibbirostris*, in having the thorax tuberculated instead of being punctured, and also in the markings, as pointed out in the published description.

*Ap. geniculatus*.—The rostrum in this species is shorter and broader than others of the genus; it is rather longer than broad, and the sides are parallel; the transverse groove at the base is rather more strongly marked in the female than in the male, where it is in the

\* See 'Revue Zoologique,' No. 7. 1841, p. 226.

form of a sharply indented line; the surface is convex, punctured and glossy, and has a longitudinal line on the basal half; in front of the eye is an oblong fovea, broad near the eye and pointed in front; this fovea is bounded above and below by a ridge, the lower ridge forming the upper boundary of the groove for the antenna. The male *Ap. geniculatus* has the terminal segment of the abdomen semicircular and punctured, and this is preceded by two very short transverse segments as usual; but in the female the hindermost of these two transverse segments undergoes a singular modification in form, being produced posteriorly so as completely to hide the terminal segment, and having a deep emargination, and terminating in two spines behind; the last segment is smooth and very glossy. In one other species of *Apocyrus* (*Ap. inflatus*), I have found the same sexual peculiarities in the abdominal segments.

*Apocyrus rufipes.*

*Ap. niger, nitidus*; pedibus splendide rufis, genibus tarsisque nigris; capite punctato; rostro crebre punctato; thorace globoso, antice posticeque truncato, tuberculis rotundatis crebre obsito: elytris rugoso-punctatis. Long. corp.  $5\frac{1}{4}$ — $4\frac{1}{4}$  lin.

*Mas*: thorace valde globoso; elytris thorace angustioribus, postice rotundatis; rostro supra concavo.

*Fœmina*: elytris thorace latioribus, subovatis, ad apicem spinis duabus armatis; rostro supra convexiusculo.

The male of this species is remarkable for the large size and nearly spherical form of its thorax. The head has some scattered punctures, and a distinct longitudinal groove between the eyes; the rostrum is thickly punctured, and its upper surface presents a large, but somewhat shallow concavity; this occupies the whole width of the rostrum in front, between the antennæ, but becomes gradually narrower towards the transverse depression at the base; on each side, in front of the eyes, are two foveæ, one above the other; the upper one is the largest, and joins the transverse groove at the base of the rostrum. The legs are of a very bright red colour; the tip of the femora, the coxæ, apex of the tibiæ, and the tarsi are black. The thorax is thickly covered with glossy, rounded tubercles, and has a slight longitudinal channel. The elytra are scarcely dilated in the middle, convex, and distinctly punctured; the punctures are confluent, and have a tendency to arrange themselves in striæ. The terminal segment of the abdomen is semicircular and coarsely punctured.

An insect agreeing with the above in all essential characters, and which I feel no doubt is the female, is remarkable for the possession of two spines at the apex of the elytra,—a character which I have found in a female of another species of the present genus. It differs, moreover, in having the thorax proportionately smaller, and the elytra rather broader than the thorax, being more dilated in the middle. They have a small subapical hump on the suture, out of which springs a brush of hairs, as in the female *Ap. geniculatus* and some others of the genus, and the terminal segment of the abdomen is conical and presents numerous irregular rugæ. The rostrum, instead

of being concave above, as in the male, is slightly convex, more densely punctured, and is slightly humped behind: in the middle is a shallow longitudinal groove. The elytra are more thickly punctured—this is also the case in the females of some other species.

*Apocyrthus Germari.*

*Ap. niger*, femoribus, ad basin, antennisque piceo-rubris; capite inter oculos et rostro rugosis; thorace antice posticeque truncato, lateribus rotundato, tuberculis minutis, nitidis, crebre obsito; marginibus anticis lateralibusque squamis viridibus ornato, fascia postice eodem colore: elytris globoso-ovatis, thorace conspicue latioribus, rugosis, fasciis tribus subinterruptis, lineisque duabus longitudinalibus ad apicem viridibus. Long. corp. 4 lin.; lat.  $1\frac{3}{4}$  lin.

This species departs somewhat from the rest of the genus in its proportions, which nearly resemble those of *Otiorhynchus gemmatus*, but the thorax is rather broader; the antennæ are rather shorter than in other *Apocyrti*. The size is equal to that of *Otiorhynchus scabrosus*.

The rostrum is separated from the head by a transverse groove in front of the eyes, and is very nearly equal to the head in length; the upper surface is rugose, and has two irregular ridges which converge behind, but do not meet. The head is rugose between the eyes, where there is a distinct longitudinal impression. The eyes are round and but little prominent. The thorax is subglobose, and truncated before and behind; it is thickly covered above with glossy tubercles, has a green band in the anterior margin, and a second transverse band towards the posterior margin; these bands, which are formed of scales, are joined on the sides of the thorax by a longitudinal series of scales. The elytra are of a short, oval form, or subglobose, but acuminate at the apex; the surface is rugose and subtuberculated: they have a narrowish transverse band near the base, a second in the middle, and a third towards the apex, besides two oblong marks on the apical portion; these bands are formed of green scales, and are somewhat interrupted in parts: the antennæ and legs are pitchy; the thighs are reddish, excepting at the apex, where they are nearly black.

*Apocyrthus inflatus.*

*Ap. inflatus*, *Erichson*, Act. Acad. Cæs. Leop. &c. vol. xvi. Suppl. p. 378. pl. 48. f. 8; *Schönh.*, v. pt. 2. p. 824.

This species is readily distinguished from others described in this paper by the great size of its almost spherical body as compared with the head and thorax, and by its more prominent eyes. The head, thorax, abdomen beneath, base of the thighs, and tarsi are black, and the elytra are red or pitchy red, but broadly margined with black. Between the eyes are some green scales, and there is a small patch of these scales on each side of the thorax, and sometimes they form an interrupted line on the middle above; near the outer margin of each elytron are three spots, one at the base, another near the middle, and the third towards the apex, also formed of green scales; the sides of the meso- and metathorax are likewise

adorned with scales. The legs are bright red. The rostrum is finely punctured above, and has a short central impressed line at the base, and a large fovea on each side at the base. The head is separated from the thorax by a deep transverse impression, and has a longitudinally impressed line and some punctures between the eyes, which are round and prominent. The thorax is subglobose, but contracted and somewhat produced before and behind; the surface is covered with largish, rounded, glossy tubercles, and there is an indistinct dorsal channel. The elytra are twice as broad as the thorax, very convex and nearly spherical, but they are produced into a kind of neck in front to meet the thorax, and near the apex they are suddenly contracted; at the apex they are pointed. The upper surface is coarsely sculptured, rugose and subtuberculated, and the impressions, though irregular, have a tendency to be arranged in lines. Length, 5 to  $6\frac{1}{2}$  lines; width  $2\frac{1}{2}$  to 3 lines.

The specimens before me are females. They have the antepenultimate segment of the abdomen extremely narrow in the antero-posterior direction, and the penultimate segment is large, produced over the last segment and deeply emarginated, and terminating in two spines or pointed processes behind.

*Apocyrus impius.*

*Ap. impius*, *Erichson*, l. c. p. 380. pl. 48. f. 9.

*Ap. niger*, opacus, squamulis virescentibus adpersis; elytris ovatis, convexis, rugulosis, punctatis. Long. corp. 4 lin. *Erichs.*

The above description, from *Erichson*, is applicable to the female sex of a species which *Mr. Cuming* found in great abundance in the Philippine Islands. It is very closely allied to the *Ap. profanus*, but differs in form and in sculpturing. It is of a dullish black colour and sprinkled with blue-green scales; the thorax is globose, and thickly studded with glossy rounded tubercles; the elytra are thickly, but not very coarsely punctured. In the male, the rostrum is rugosely punctured, somewhat concave at the base, and has a moderately broad and deep longitudinal furrow in the centre, and a deepish oblong fovea on each side in front of the eye—the transverse furrow at the base of the rostrum runs into this. The head is punctured and has an impressed line between the eyes, which are but little prominent. The thorax is as broad or broader than the elytra—these are nearly cylindrical, or but indistinctly swollen in the middle, from whence they become gradually narrower, and are rounded at the extremity. The abdomen is punctured beneath, and is tolerably well-clothed with minute ash-coloured hairs; the terminal segment is semicircular and rather coarsely punctured. The female has the rostrum convex above, more thickly punctured than the male, and with the longitudinal impression indistinct; the transverse impression at the base is very deep, and suddenly curves in front of each eye to join the lateral fovea, which is deep. The sides of the thorax are boldly rounded, but this segment is narrower than the elytra—these are distinctly dilated in the middle and acuminate behind; the apex is somewhat produced. The abdomen is convex beneath, and the terminal segment is smooth, glossy, and slightly

concave. This sex is more densely clothed with scales than the other; the males, indeed, are often almost destitute of scales.

*Apocyrthus profanus*.

*Ap. profanus*, *Erichs.* l. c. p. 379; *Schönh.* v. pt. 2. p. 852.

*Sphærogaster profanus*, *Eschsch.*

Oblongus, fuscus, parum nitidus, thoracis pectorisque lateribus parce viridisquamosis; fronte canaliculata, thorace granulis nitidis crebre adperso; elytris subovatis, subconvexis, thorace parum latoribus, crebre granulatis, margine basali dense viridisquamosis, femoribus ferrugineis.

*Var. β.* Elytris tibiisque etiam ferrugineis.

The above description, which is from Schoenherr, very well characterizes an insect brought home in tolerable abundance by Mr. Cuming. I have before me specimens exhibiting three distinct varieties: the first is black, and well-clothed with green scales; the second is pitchy, has the femora reddish at the base, and is less densely clothed with scales, and the third is of a pitchy red colour, almost destitute of scales; these being chiefly confined to a narrow band across the base of the elytra. I may add, of the first variety there are both sexes, of the second variety there are but females, and of the red variety\* there are no females.

This species greatly resembles the *Ap. impius*, but is usually rather smaller, and the elytra differ in having minute glossy tubercles.

The rostrum is rugose above, has a broad and shallow longitudinal impression in the middle, and another on each side of this, which is broad at its commencement, near the transverse line at the base of the rostrum, and becomes gradually narrower to its point of termination, which is in a line with the point of insertion of the antennæ: on the side of the rostrum is a deep longitudinal groove which runs into the groove for the antennæ. The thorax is globose and covered with minute glossy tubercles: in the male it is very nearly equal in width with the elytra; in the female the sides are less boldly rounded, and it is decidedly narrower than the elytra—these are covered with rugæ and minute tubercles. In the male the elytra are rounded at the extremity, and the terminal segment of the abdomen is semicircular and rugose. In the female the elytra are ovate, and attenuated and pointed behind; they have a subapical prominence on the suture. The terminal segment of the abdomen is conical, glossy, and has a large shallow fovea. Length from  $3\frac{3}{4}$  to 5 lines.

*Apocyrthus Chevrolatii*.

*Ap. niger*, femoribus rubris, antennis, tibiis, genibusque piceis: capite inter oculos punctato et linea longitudinali impressa; rostro rugoso, basi canaliculato; thorace subgloboso, tuberculis crebris obsito, dense viridisquamoso, linea transversa in mediam denudata; elytris convexis, ovatis, rugosis et tuberculis minutis obsitis, squamis viridibus ornatis, fasciis duabus, et plaga utrinque subapicali, denudatis. Long. corp. 4—5 lin.

This species is about equal in size to the *Ap. profanus*, which it very nearly resembles also in form; it is readily distinguished by the

\* The difference of colour certainly does not arise from immaturity.

beautiful bands of golden green, or blue scales with which it is adorned. The thorax is nearly covered with scales, the only denuded parts being a band across the centre and a small space following the posterior margin. On the elytra is a coloured band at the base, and a second in the middle, and the apical third of the elytra is covered with scales, with the exception of an oblong space on each side between the suture and outer margin. The antennæ are pitchy, and sometimes reddish at the base; the legs are also pitchy, but the femora are red at the base; sometimes the red extends almost to the joint, and in some specimens the apical half of the femora is dusky. The rostrum is rugose above, and has two irregular ridges at the base; these nearly meet near the transverse impression which separates the head from the rostrum, but diverge in front; on the side of the rostrum is a deep longitudinal groove, which commences at the anterior angle of the eye and runs into the groove for the antenna. In the male the thorax is scarcely narrower than the elytra, and the terminal segment of the abdomen is semicircular, coarsely punctured, and has a fovea in the middle. In the female the elytra are more ovate, decidedly broader than the thorax, and pointed at the apex; the terminal segment of the abdomen is conical, has a few punctures and some irregular little grooves near, and running for the most part parallel with, the margin.

*Apocyrus acutipennis.*

*Ap. niger*, parum nitidus; rostro rugoso, linea longitudinali ad basin impressa; capite inter oculos squamis viridibus ornato; thorace convexo, lateribus rotundatis, tuberculis nitidis crebre obsito, fascia antica, lateribus, maculisque duabus, squamis viridibus vestito; elytris ovatis, tuberculis minutis subacutis crebre obsito, fasciis duabus, maculisque tribus subapicalibus viridibus. Long. corp.  $4\frac{1}{4}$ —5 lin.

*Fœm.*: elytris ad apicem divergentibus, et acutis.

*Mas*: elytris ad apicem subrotundatis.

This species is very closely allied to the *Ap. Chevrolatii*, but is at once distinguished by the black colour of its legs and antennæ, by its having a spot on the suture towards the apex of the elytra, the space between the eyes is broader, &c. The rostrum is very rugose, has a longitudinal depression in the middle and another on each side of this: on the side in front of the eye is a longitudinal groove, which posteriorly joins that which separates the rostrum from the head, and anteriorly it partially runs into the antennal groove; not so distinctly joining that groove as in *Ap. Chevrolatii*. The thorax is globose in the male and but little narrower than the elytra, which are slightly dilated in the middle and somewhat rounded at the apex. In the female the thorax is less globose, proportionately smaller, and the elytra larger, more ovate, and at the apex they slightly diverge, are curved downwards and acutely pointed: here the terminal segment of the abdomen is impunctate and remarkable for a deep and largish fovea at the apex, a character which the female *Ap. Chevrolatii* does not exhibit, neither has the corresponding sex of that species the acute apex to the elytra. In the male of the present species the terminal segment of the abdomen is semicircular and rugose. As re-

gards the markings, which are formed of bluish green scales, they consist of a narrow line on the front and sides of the thorax and two spots, one on each side of the centre : on the elytra are two bands, one at the base and the other in the middle, a spot on the suture between this last band and the apex of the elytra, and a subapical patch on each side, which sends out a branch to join the central fascia at the outer margin of the elytron, which has an almost uninterrupted band of scales. In the female insect I have further to notice that the elytra have a hump on the suture situated rather behind the apical third.

*Apocyrthus concinnus*.

*Ap. niger*, parum nitidus ; rostro rugoso ; thorace subgloboso, crebre tuberculato, pone medium linea transversa, marginibus anticis lateralibusque aureo-viridibus ; elytris ovatis, crebre tuberculatis, ad apicem fasciisque duabus, aureo-viridibus. Long. corp. 4 lin.

This species very closely resembles the *Ap. acutipennis* (like that, differing from *Ap. Chevrolatii* in having black legs), but differs in having the markings of a golden-green colour, a narrow band on the thorax rather behind the middle, and the whole apex of the elytra covered with scales ; these, though somewhat scattered, do not arrange themselves into spots as in *acutipennis*. In form and sculpturing there are moreover some points of distinction. The rostrum is very rugose, and does not exhibit any longitudinal channel ; the elytra in the female are not produced into an acute angle at the apex as in *acutipennis*, and the terminal segment of the abdomen in this sex is destitute of the large fovea, and is rather coarsely punctured. The elytra are more thickly tuberculated. The space between the eyes is considerably broader and more distinctly punctured than in *Ap. Chevrolatii*.

*Apocyrthus bispinosus*.

*Ap. niger*, squamis viridibus adpersis ; thorace valde globoso, tuberculis crebre obsito ; elytris rugosis, subseriatim tuberculatis, ad apicem bispinosis ; femoribus rufescentibus. Long. corp. 3½ lin.

This species is less than the *Ap. impius* of Erichson, and has the elytra more constricted at the base. The rostrum is thickly punctured, and has a broadish but shallow longitudinal impression ; it is separated from the head by a transverse groove, which runs on each side into a large fovea situated immediately in front of the eye ; these lateral pits contract the hinder part of the rostrum, which is somewhat humped and raised above the plane of the head. The head is distinctly punctured between the eyes, where there is a longitudinal groove ; the eyes are large and but little convex. The thorax is truncated before and behind, but nearly of a spherical form ; above it is thickly studded with glossy, rounded tubercles, and rather sparingly sprinkled with bright green scales. The elytra are very convex and of a short ovate form ; the apex of each elytron is produced into a spine, which is evident to the naked eye, and there is a small hump at the suture at a short distance from the apex ; the surface of the elytra is very rough, being broken up into rugæ and tubercles—the latter form longitudinal striæ. Bright green scales are

as it were sprinkled on the elytra. The antennæ have a slight pitchy hue, and so have the tibiæ; the femora are red, but blackish at the extremity.

The specimen from which this description is taken is a female, and has the terminal segment of the abdomen conical and covered with rugæ. The insect, which I suspect to be the male, differs in having the elytra narrower and rounded at the extremity, the rostrum rather coarsely punctured, and has three oblong furrows at the base.

*Apocyrus adpersus.*

*Ap. ater*; squamis viridibus adpersis; tibiis antennisque piceo-nigris, femoribus rufescentibus; rostro rugoso, ad basin distincte transversim impresso, foveis tribus oblongis impresso; capite inter oculos punctato atque linea longitudinali impresso; thorace subgloboso, antice posticeque truncato, tuberculis nitidis crebre obsito. Elytris thorace paulo latioribus, rugosis et tuberculis minutis crebris. Long. corp. 3 lin.

The form of this insect is very nearly the same as in *Apocyrus profanus*, Eschsch., but the elytra are rather shorter in proportion. The rostrum is rugose, punctured, has a very distinct transverse impression at the base, a broadish and shallow longitudinal groove in the middle, extending from the base and terminating nearly in a line with the antennæ, and on each side of this is a similar groove. The head, between the eyes, is distinctly punctured, and has a longitudinally impressed line; the eyes are round and but little convex. The thorax is nearly globose, but truncated before and behind; its surface is thickly studded with glossy tubercles. The elytra are about half as long again as the thorax; they are truncated in front, increase in width in the middle, where they attain a diameter very slightly exceeding that of the thorax, and at the apex they are somewhat acuminate, but rounded at the point; their surface is subsulcated, very rough, having coarse confluent punctures and small pointed tubercles. Numerous round bright green scales are scattered on the thorax and elytra, and there are a few on the head between the eyes. The tibiæ and antennæ are pitchy, and the thighs are of an obscure red colour, excepting at the apex, where they are dusky.

This is a small species about equal in size to *Phyllobius argentatus*, and less than the *Ap. bispinosus*; the female is readily distinguished from the corresponding sex of the insect last mentioned by the want of the spines at the apex of the elytra; the thorax is smaller in proportion. The male differs from the supposed male of *Ap. bispinosus* in having the rostrum more coarsely sculptured, and in the longitudinal groove in front of the eye being distinctly joined with the antennal groove; this groove is represented in ♂ *bispinosus* by an oblong fovea which does not run into the antennal groove; the thorax is smaller in proportion to the elytra.

*Apocyrus pulverulentus.*

*Ap. niger*, squamis viridibus minutissimis dense pulverulentis; pedibus rufo-testaceis, vel piceo-testaceis, pilis minutis albis vestitis; antennis piceis; rostro rugoso, canaliculato; thorace subgloboso, tuberculis nitidis

crebris; elytris ovatis, thorace paulo latioribus, tuberculis minutis crebris obsitis. Long. corp.  $2\frac{3}{4}$ — $3\frac{1}{2}$  lin.

This species is a trifle less than the last, from which it may be distinguished by the very minute size of the scales with which it is covered, or as it were powdered, for they do not completely cover the body; the minute tubercles on the thorax and elytra are free from scales; the abdomen beneath is rather sparingly furnished with whitish hairs. The legs are shorter, and the femora are less clavate than in *Ap. adpersus*.

XXXVII.—*Descriptions of new Shells from the Collection of Captain Sir Edward Belcher, R.N., C.B.* By RICHARD BRINSLEY HINDS, Esq., Surgeon R.N.

[Continued from p. 21.]

*Mitra Belcheri.* Testa fusiformi, turrita, elongata, solida; anfractibus lævigatis, transversim inæqualiter sulcatis vel exaratis, divisionibus duabus superioribus majoribus; epidermide nigro induta sed infra lactea; columella quadriplicata; labio externo tenui. Axis 48 lin.

*Geog.* Gulfs of Nicoya and Papagayo, Central America; dredged from a muddy floor in 17 fathoms.

This fine shell approaches in size the largest species of the genus, and is surpassed by none in symmetry and outline. In shape it is fusiform and turreted, the spire rather produced, and the last whorl not occupying more than half the entire length. The shell itself is milky white, but is everywhere covered by a smooth black epidermis. The whorls are ploughed with deep channels or sulci at unequal distances, of which the two superior divisions have the greatest breadth, but the inferior of the two is the broadest; and they overlap each other more than is usual in the genus. The columella is furnished with four plaits, the upper being somewhat distant, and the lower not very distinct. The outer lip is thin and uneven, by reason of the sulci which terminate on its margin; the inner is slightly developed.

The shell is named after the Commander of the expedition, and, handsome as it is, commemorates but feebly his devotion to conchology. Two specimens, an adult and a young shell, are in the collection; a third is in my own collection, and I know of the existence of no others.

*Ranella Californica.* Testa ovata, ventricosa, fusca; anfractibus uniseriatim tuberculatis, transversim granoso-striatis, tuberculis conicis subdistantibus; varicibus magnis cavernosis; anfractu ultimo multiseriatim obsolete tuberculato, fasciis duabus angustis pur-